



01-ASD-109 (GT)

IN THE UNITED STATES PATENT & TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

SERIAL NO.: 09/963,815
FILED: September 26, 2001
FOR: CONTROLLING FUEL TANK VAPOR VENTING DURING
REFUELING
APPLICANT: ROBERT P. BENJEEY
ART UNIT: 3753
EXAMINER: JOHN A. RIVELL
CONFIRMATION #: 1163

Mail Stop Appeal Brief – Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Sir:

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TRANSMITTAL OF APPEAL BRIEF
UNDER 37 CFR 1.17f

Transmitted herewith is the Brief (**in triplicate**) for Appellant in the above-identified application.

Please charge the \$330.00 fee for filing the Brief to Deposit Account
No. 05-0275. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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CERTIFICATE OF MAILING UNDER 37 CFR 1.8

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March 8, 2004

Loretta K. Dingethal



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BRIEF OF APPELLANT UNDER 37 CFR 1.192

Applicant filed a Notice of Appeal October 8, 2003, from which Applicant's Brief was due December 8, 2003.

A request for a three month extension of time until March 8, 2004 is submitted concurrently herewith.

REAL PARTY IN INTEREST

Eaton Corporation as assignee of the entire interest is the real party in interest; and, the inventor is currently employed by the assignee.

RELATED APPEALS AND INTERFERENCES

None.

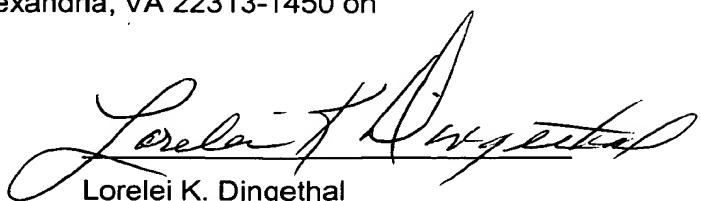
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Lorelei K. Dingethal

STATUS OF THE CLAIMS

Claims 1 through 11 are pending in the Application.

Claims 1 through 11 stand finally rejected.

STATUS OF AMENDMENTS

No amendments have been filed subsequent to the final rejection.

SUMMARY OF THE INVENTION

The invention relates to vapor recirculation systems for motor vehicle fuel tanks and utilizes a mechanical seal 32 disposed in the enlarged upper end 26 of the filler tube 24 for a fuel tank. A vapor recirculation line 50 is connected to a float operated vent valve 38 disposed on the upper wall of the tank and which is connected to a vapor storage canister 44 which recirculates vapor through line 46 to an engine air inlet. The mechanical seal 32 is designed to seal about a refueling nozzle 36 upon insertion of the nozzle in the upper end 26 of the filler tube. Continued insertion of the filler nozzle, as shown in FIG. 2 in dashed outline causes the end of the nozzle to be inserted in a reduced diameter portion 24 of the filler tube which forms a liquid seal about the nozzle 28 thereby entraining or aspirating vapor through recirculation tube 50 into the upper end of the filler tube.

ISSUES

1. Whether Applicant's claims are obvious under 35 USC over a proposed combination of the teachings of the Allison '497 and the prior art disclosed in Applicant's FIG. 5.

GROUPING OF THE CLAIMS

Method claims 1 through 3 stand or fall together.

Article claims 4 through 7 stand or fall together.

Method claims 8 through 11 stand or fall together.

ARGUMENT

Claims 1 through 11 are presented in clean form in the Appendix attached hereto.

The Examiner has proposed a combination of the teachings of the Allison patent with those of the prior art disclosed in FIG. 5 of the present application.

The Examiner further asserts that with respect to the teachings of Allison, "any aspiration effect caused [by] the inflow of fuel from the nozzle within the filler neck 14 downstream of the mechanical seal 212 in chamber 89 will cause fuel vapor . . . to be aspirated within the inflow of liquid fuel and be recirculated back into the tank as recited by the claims at issue".

It is submitted that the Examiner is asserting function to the Allison patent that is not taught nor suggested. The drawings of the patent clearly show that the filler nozzle (shown in dashed outline) is clearly of insufficient proportion ("diameter") to the filler tube upper region which is not reduced in size as to cause any aspirating effect. If the Allison patent taught a liquid seal in the upper filler tube end about the nozzle, then the result would be aspiration. However, Allison does not teach this. The Examiner's proposal to add the teachings of Allison to FIG. 5 of Applicant's prior art fails to provide any suggestion of or basis for the proposed combination. Therefore the Examiner's conclusions on the proposed combination are not supportable as obviousness.

Accordingly, it is requested that the Examiner's rejection be reversed and the claims allowed.

Respectfully submitted,



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APPENDIX

1. A method of controlling fuel tank vapor venting during refueling comprising:
 - (a) providing a fuel filler neck on the tank and inserting a fuel filler nozzle in the tank filler neck and mechanically sealing between the nozzle and filler neck;
 - (b) disposing a vent valve in the upper wall of the tank and connecting a vapor vent line from the vent valve to a vapor storage canister; and,
 - (c) connecting one end of a recirculation line to the filler neck downstream of the mechanical seal and connecting an end opposite the one end to the vapor vent line; and, forming a liquid seal between the filler neck and the fuel discharged from the nozzle during refueling and entraining recirculated vapor into the tank.
2. The method defined in claim 1, wherein said step of disposing a vent valve includes disposing a float operated valve.
3. The method defined in claim 1, wherein said step of providing a fuel filler neck includes providing a relief valve for bypassing the mechanical sealing.
4. In a tank refueling vapor control system of the type having a vapor storage canister, and seal for a refueling nozzle in the tank filler tube, the improvement comprising:
 - (a) a vent valve disposed on the tank upper wall and having a vapor vent line therefrom connected to the canister;
 - (b) a recirculation line having one end connected to the filler neck downstream of the nozzle seal and the end opposite the one end connected to the vent line for recirculating vapor during refueling; and,
 - (c) a portion of the filler neck configured to form a liquid seal about fuel discharging from the nozzle for entraining recirculated vapor.

5. The improvement defined in claim 4, wherein the vent valve is float operated.
6. The improvement defined in claim 4, wherein the filler neck includes a pressure relief valve for bypassing the nozzle seal in the event of excessive fuel vapor pressure.
7. The improvement defined in claim 4, wherein the filler neck includes a one-way valve disposed downstream of the mechanical seal and adapted to be opened by insertion of a refueling nozzle.
8. A method of controlling fuel tank vapor venting during refueling comprising:
 - (a) providing a fuel filler neck in the tank;
 - (b) sealing about a fuel filler nozzle upon insertion in the filler neck;
 - (c) venting tank vapor through a valve and connecting the valve outlet to a storage canister; and,
 - (d) recirculating vapor from the valve outlet to the filler neck; and, forming a liquid seal between the filler neck and the fuel discharged from the nozzle during refueling.
9. The method defined in claim 8, wherein said step of recirculating includes connecting one end of a vapor vent line to the valve outlet and an end opposite said one end of said vapor vent line to the canister; and, connecting one end of a recirculation line to said vapor vent line and an end opposite said one end of said recirculation line to the filler neck.
10. The method defined in claim 8, wherein said step of venting tank vapor through a valve includes operating the valve with a float.

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11. The method defined in claim 8, wherein said step of sealing about a filler nozzle includes disposing a seal in the filler neck and providing a pressure relief valve for bypassing said seal in the event of excessive fuel vapor pressure in the tank.